

IN THE DRAWINGS

Applicants submit a replacement Sheet No. 1 containing Figures 1 and 2 and reflecting corrections made to Figures 1 and 2.

## REMARKS

Applicants respectfully request consideration of the subject application.

This Response is submitted in response to the Office Action mailed July 5, 2007.

Claims 1-5, 7, 9-13, 15-23, 25-29, 31-35, 42-43 and 45-46 are pending. Claims 1-5,

7, 9-13, 15-23, 25-29, 31-35, 42-43 and 45-46 are rejected. In this Amendment,

claims 1 and 42 have been amended, claims 29 and 31 have been cancelled and

claim 47 has been added. No new matter has been added.

### 35 U.S.C. § 103 Rejections

The Examiner has rejected claims 1-5, 7, 9-13, 15-23, 25-29, 31, 42-43 and 45-46 under 35 U.S.C. § 103(a) as being unpatentable over Yamamoto, et al. (U.S. Patent No. 4,729,060, hereinafter "Yamamoto") in view of Bramhall, et al., (United Kingdom Patent No.: 2 109 996 A, hereinafter "Bramhall"), claim 32 under 35 U.S.C. § 103(a) as being unpatentable over Yamamoto and Bramhall as applied to claim 1 above, and further in view of Novotny, (U.S. Patent No. 5,206,791, hereinafter "Novotny") and claims 33-35 under 35 U.S.C. § 103(a) as being unpatentable over Yamamoto in view of Bramhall and Novotny as applied to claim 32 above and further in view of Hisano, et al. (U.S. Patent No. 5,198,889, hereinafter "Hisano").

Yamamoto describes a cooling module. In two embodiments of Yamamoto, the cooling module includes a heat transfer stud 75 having cooling fins 77. See Figures 11 and 12. Yamamoto, however, requires that the cooling fins be parallel to the direction of flow of the coolant in order to effectively transfer heat to the coolant.

Bramhall describes a device for hydraulically clamping a wafer. The clamp includes a fixed plate and a moveable plate, each connected to a housing. A fluid is circulated through the apparatus to provide cooling of the plates. Bramhall does not describe a heat sink coupled with the plates.

Thus, the cited art fails to describe, *inter alia*, as claimed in claim 1: "a heat sink attached to an interior surface of said closed end in the compressed position and in the extended position to cause heat absorbed by said closed end to be conducted through said conduit and said flexible channel wherein said heat sink comprises a plurality of spaced apart planar fins wherein a portion of said spaced apart planar fins extends into said conduit in said extended position, the planar fins being perpendicular to a flow of the fluid through the conduit."

As explained in the present specification, one advantage of providing the fins to be perpendicular to the flow of fluid through the conduit is turbulence. As described in the present specification, the turbulence resulting from the fluid

flowing over and around the fins provides a more efficient heat transfer because cooler fluid is continually mixed with the warmer fluid.

Similarly, the cited art fails to teach or suggest, *inter alia*, as claimed in claim 42: "means for inducing turbulence in the conduit." As explained in the present specification, exemplary means for inducing turbulence in the conduit include flow diverters in the conduit or by having at least a portion of the fins extending into the conduit and being perpendicular to the flow of fluid through the conduit. As explained above, the resulting turbulence results in more efficient heat transfer.

Thus, the cited art fails to teach or suggest all of the limitations of independent claims 1 and 42. Claims 2-5, 7, 9-13, 15-23, 25-28, 32-35, 43 and 45-46 depend, directly or indirectly, from one of the foregoing independent claims. Applicants, accordingly, respectfully request withdrawal of the rejections under 35 U.S.C. § 103.

#### New Claims

Applicants have added new claim 47. Applicants submit new claim 47 is also patentable over the cited art.

The cited art fails to teach or suggest, *inter alia*, as claimed in claim 47: "a conduit, a plurality of flow diverters attached within said conduit to create

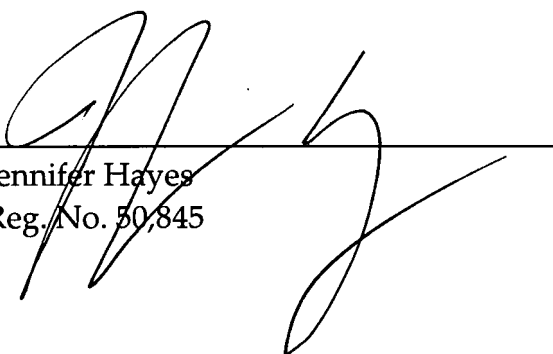
turbulence in a fluid within the conduit." As explained above, the turbulence created by the flow diverters results in more efficient heat transfer. The cited art fails to describe flow diverters in the conduit.

Applicants respectfully submit that the present application is in condition for allowance. If the Examiner believes a telephone conference would expedite or assist in the allowance of the present application, the Examiner is invited to call Jennifer Hayes at (408) 720-8300.

Please charge any shortages and credit any overages to Deposit Account No. 02-2666. Any necessary extension of time for response not already requested is hereby requested. Please charge any corresponding fee to Deposit Account No. 02-2666.

Respectfully submitted,  
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